

WHAT IS CLAIMED IS:

1. A multiple output converter including a primary output
2 and at least one auxiliary output, comprising:
3 a transformer having a primary winding and at least one
4 secondary winding;
5 a switch, coupled to said primary winding, configured to
6 impress an input voltage across said transformer, a first output
7 voltage configured to be provided at said primary output via a
8 magnetizing inductance associated with said transformer; and
9 an output inductor coupled to said at least one secondary
10 winding, a second output voltage configured to be provided at said
11 auxiliary output via said output inductor.

2. The multiple output converter as recited in Claim 1
2 further comprising a rectifier coupled to said at least one
3 secondary winding.

3. The multiple output converter as recited in Claim 1
2 wherein said transformer comprises first and second secondary
3 windings.

4. The multiple output converter as recited in Claim 3
further comprising a synchronous rectifier having first and second
synchronous rectifier switches coupled to one of said first and
second secondary windings.

5. The multiple output converter as recited in Claim 4
wherein said first and second synchronous rectifier switches are
cross-coupled.

6. The multiple output converter as recited in Claim 1
further comprising another switch coupled to said primary winding.

7. The multiple output converter as recited in Claim 6
wherein said switch is configured to conduct for a primary duty
cycle (D) and said another switch is configured to conduct for a
complementary duty cycle (1-D).

8. The multiple output converter as recited in Claim 7
wherein said primary duty cycle (D) of said switch is selected to
provide at least one of substantial ripple cancellation associated
with said multiple output converter and a substantially zero net DC
bias across said transformer.

9. The multiple output converter as recited in Claim 1
2 further comprising an output capacitor coupled to said primary
3 winding.

10. The multiple output converter as recited in Claim 1
2 further comprising an output capacitor coupled to said output
3 inductor.

11. A method of operating a multiple output converter
including a primary output and at least one auxiliary output,
comprising:

providing a transformer having a primary winding and at least
one secondary winding;

impressing an input voltage across said transformer with a
switch coupled to said primary winding;

producing a first output voltage at said primary output via a
magnetizing inductance associated with said transformer; and

further producing a second output voltage at said auxiliary
output via an output inductor coupled to said at least one
secondary winding.

12. The method as recited in Claim 11 further comprising
providing a rectifier coupled to said at least one secondary
winding.

13. The method as recited in Claim 11 wherein said
transformer comprises first and second secondary windings.

14. The method as recited in Claim 13 further comprising
providing a synchronous rectifier having first and second
synchronous rectifier switches coupled to one of said first and
second secondary windings.

15. The method as recited in Claim 14 further comprising
2 cross-coupling said first and second synchronous rectifier
3 switches.

16. The method as recited in Claim 11 wherein said impressing
2 is performed in cooperation with another switch coupled to said
3 primary winding.

17. The method as recited in Claim 16 further comprising
2 causing said switch to conduct for a primary duty cycle (D) and
3 said another switch to conduct for a complementary duty cycle (1-
4 D).

18. The method as recited in Claim 17 wherein said primary
2 duty cycle (D) of said switch is selected to provide at least one
3 of substantial ripple cancellation associated with said multiple
4 output converter and a substantially zero net DC bias across said
5 transformer.

19. The method as recited in Claim 11 further comprising
2 filtering said first output voltage with an output capacitor
3 coupled to said primary winding.

20. The method as recited in Claim 11 further comprising
2 filtering said second output voltage with an output capacitor
3 coupled to said at least one secondary winding.